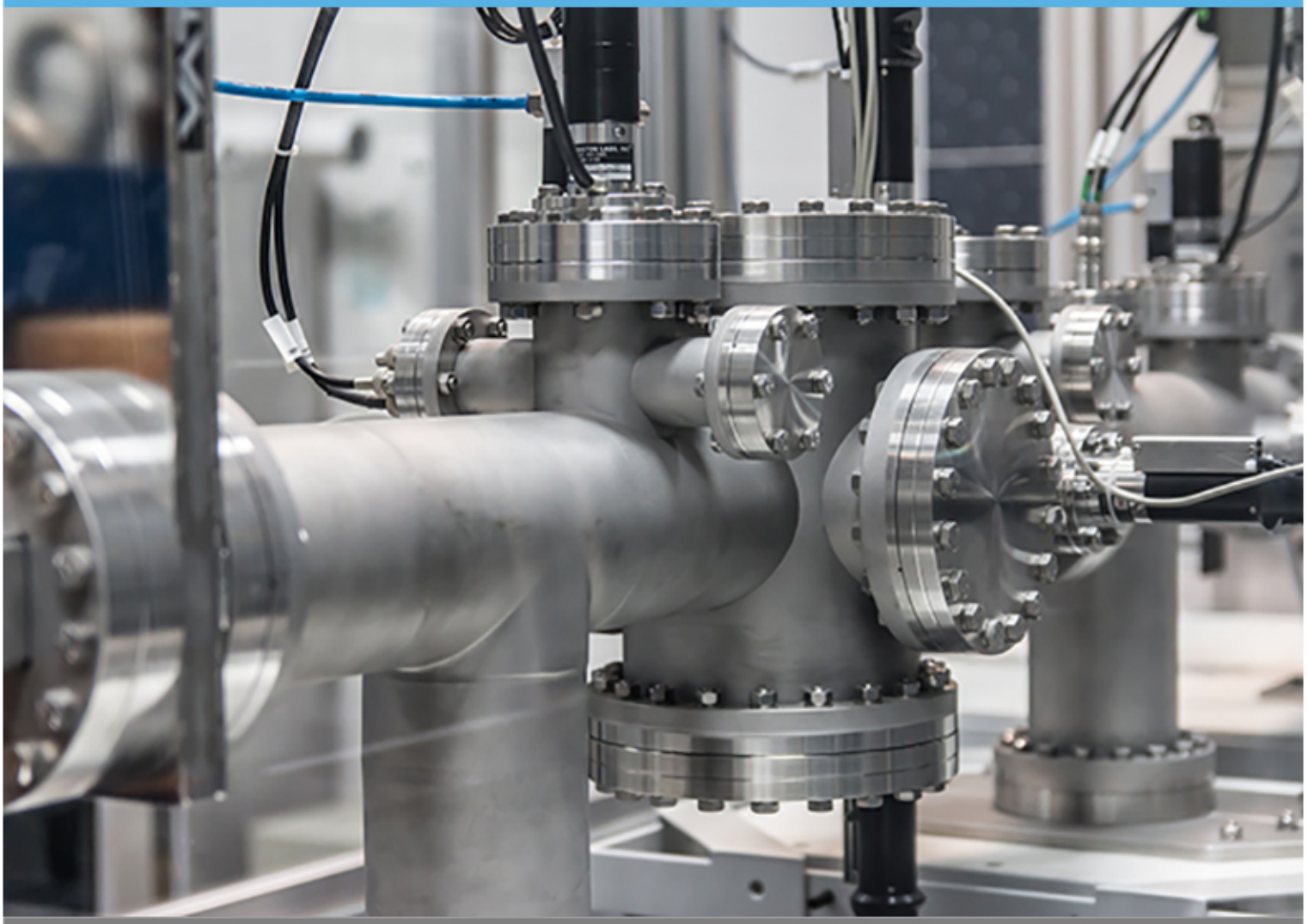
15 - 16 August 2018 |9am - 5pm| WWW.SEAS.ORG.SG



Waste Heat Recovery

Course Summary

Waste heat recovery (WHR) is very important for both sustainability and profitability of process industries. It is even more important in Singapore because of very high industrial activity and lack of energy resources such as oil, natural gas and coal. WHR has great potential for reducing fresh fuel demand by recovering waste heat and reusing it. It can simultaneously reduce both the heating and cooling loads and hence reduce operating and/or capital costs. It will also reduce CO2 emissions.

Consequently, heat recovery projects can generate credits within the CRM and carbon trade programs, and hence improve financial return on WHR projects. WHR is equally beneficial for both Greenfield (i.e., in new plants) and Brownfield (in existing plants) projects.

Course Objective

This workshop will present a comprehensive and concise coverage of fundamentals, advanced topics and practical applications of waste heat recovery (WHR) in industrial processes. In this workshop, simple and effective WHR techniques will be illustrated, with suitable industrial examples, to help participants quickly identify, calculate and develop the heat recovery saving potentials within their processes. Key benefits/drivers of WHR projects will be illustrated; these are very useful to decision makers and engineers for developing successful WHR business cases.

Wherever possible, Brownfield project technique such as revamping/ retrofitting the WHR equipment will be highlighted; this can greatly benefit the companies facing capital constraints, for Greenfield projects.

14 SCEM PDU Points Awarded

SEAS
Sustainable Energy Association of Singapore

15 - 16 August 2018
9am - 5pm
Singapore Sustainability Academy
180 Kitchener Road Level 6 Sky Park, #06-10
City Square Mall Singapore 208539

SEAS
Sustainable Energy Association of Singapore

Waste Heat Recovery

Program Outline

- Introduction
- Fundamentals with Examples: Heat Transfer and
- Heat Integration
- Fundamentals with Examples: Pinch Analysis
- Heat Exchange Equipment: Direct Contact, Shell & Tube, Plate Type, Spiral, Recuperators, Heat Wheels, Economizer, Heat Pipes
- Costing and Economic Evaluation
- Fouling
- WHR Case Studies and Industrial Applications
- Cogeneration
- Tri-generation and Beyond
- WHR Projects' Framing including Economic, Environmental Benefits and Revamp opportunities
- Sustainability
- Discussion and Closure

Rates

Normal	Group
SEAS Member:	3 participants and above:
$ 780.00	$ 800.00
Non-Member:	SCEM Special Rate
$ 850.00	$ 800.00

Fees are inclusive of GST
SEAS may cancel or reschedule a course at its discretion and will use reasonable efforts to notify delegates at least 5 working days in advance. In these circumstances, delegates will be offered an alternative date, an alternative location or a full refund of course fees paid. SEAS is not responsible for airline or accommodation costs incurred by delegate in the event a course is cancelled or re-scheduled.
Substitutions (name changes) are accepted at any time prior to the event without penalty, subject to the replacement delegate satisfying any necessary course pre-requisites.

Dr. Chirla Chandra Sekhara Reddy

Dr. Chirla Chandra Sekhara Reddy is Technology & Optimization Manager at Singapore Refining Company Private Limited, where he leads a range of activities such as Technology, Optimization, Project Development, Process Engineering, Plant Troubleshooting and Process Safety. He holds Bachelors and Doctoral Degrees in Chemical Engineering from Andhra University and Master Degree in Chemical Engineering from IIT Kanpur. He also holds MBA Degree from Murdoch University. He has 22 years of rich diverse experiences in Process Engineering, Project Management, Technical services, Operations Optimization and Process Safety in Refinery, Petrochemical, Chemical and Utility plants.

Prof. Gade Pandu Rangaiah

Prof. Gade Pandu Rangaiah has been with the National University of Singapore (NUS) since 1982, in the Department of Chemical & Biomolecular Engineering. He received his Bachelor, Masters & Doctoral Degrees in Chemical Engineering from Andhra University, IIT Kanpur and Monash University respectively. He worked in Engineers India Limited for 2 years before his Doctoral study. Prof. Rangaiah was recognized with Annual Teaching Excellence Awards by NUS for 4 consecutive years.

Call us at +65 6338 8578 to enquire **Email: training@seas.org.sg**

Registration Form

☐ Yes! I would like to register for this programme ☐ I am unable to attend but please put me on your mailing list

Participant's Details

1 Name (Dr/Mr/Ms/Mrs) Designation
Hp Email
NRIC

Participant's Details

2 Name (Dr/Mr/Ms/Mrs) Designation
Hp Email
NRIC

Billing Information

Company Name Contact Name
Company Address Email
Tel